Carrier
HEATING & COOLING

38SQ Control Box Modification Kit

Installation Instructions

Part No. 315776-701, -702, -703, -704, and -705

NOTE: Read the entire instruction manual before starting the installation.

INTRODUCTION

The following procedure is for field modification of the electrical controls in the compressor section of a 38SQ triple-split heat pump with the A, O, and R microprocessor board. The modification consists of removing the existing control box and installing the new control box with a standard time/temperature defrost control board.

SAFETY CONSIDERATIONS

Improper installation, adjustment, alteration, service, maintenance, or use can cause explosion, fire, electrical shock, or other conditions which may cause personal injury or property damage. Consult a qualified installer, service agency, or your distributor or branch for information or assistance. The qualified installer or agency must use factory-authorized kits or accessories when modifying this product. Refer to the individual instructions packaged with the kits or accessories when installing.

Follow all safety codes. Wear safety glasses and work gloves. Use quenching cloth for brazing operations. Have fire extinguisher available. Read these instructions thoroughly and follow all warnings or cautions attached to the unit. Consult local building codes and National Electrical Code (NEC) for special requirements.

Recognize safety information. This is the safety-alert symbol ⚠. When you see this symbol on the unit and in instructions or manuals, be alert to the potential for personal injury.

Understand the signal words DANGER, WARNING, and CAUTION. These words are used with the safety-alert symbol. DANGER identifies the most serious hazards which **will** result in severe personal injury or death. WARNING signifies hazards which **could** result in personal injury or death. CAUTION is used to identify unsafe practices which **would** result in minor personal injury or product and property damage.

⚠ WARNING

Before servicing or modifying system, always turn off main power to system. There may be more than 1 disconnect switch. Turn off accessory heater power if applicable. Electrical shock can cause personal injury or death.

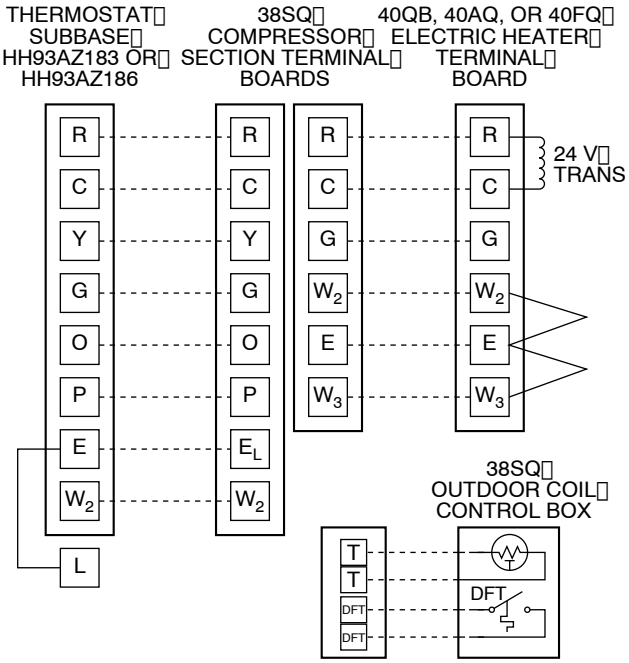
⚠ WARNING

As with any mechanical equipment, personal injury can result from sharp metal edges. Take care when removing parts.

MODIFICATION PROCEDURE

Step 1—Remove Factory-Installed Control Box

1. Turn off power to the compressor section and indoor air handler.
2. At wire nuts, disconnect line power wires from wires to secondary disconnect.
3. Remove access wrapper and top cover.
4. Disconnect crankcase heater wires and remove wires from control box. Do not remove crankcase heater from compressor.
5. Remove compressor terminal box cover and disconnect compressor wires. Do not damage or disturb the fusite plug.
6. Remove thermostat wires from compressor section defrost board in compressor section. Label wires for ease of connection to terminal board. (See Fig. 1.)



COOLING AND 2-STAGE HEATING WITH ELECTRIC HEAT BEFORE MODIFICATION

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Fig. 1—Wiring Prior to Modification

Refer to Fig. 2 to assist in completion of the following steps.

7. Disconnect defrost thermostat wires and remove from control box.
8. Disconnect wires to reversing valve solenoid coil.
9. Disconnect wires to low-pressure switch (LPS) and remove from control box.
10. Disconnect wires to outdoor fan motor and remove from control box.
11. Remove control box mounting screws and remove box.

Step 2—Install Control Box Modification Kit

1. Mount modified control box using screws removed from old control box. (See Fig. 3.)

Table 1—Control Box Modification Kits

UNIT	KIT NO.
38SQ024-3	315776-701
38SQ030-3	315776-702
38SQ036-3	315776-703
38SQ042-3	315776-704
38SQ048-3	315776-705

⚠ WARNING

Make sure control compartment access panel is closed before restoring power to unit. Failure to follow this warning could cause personal injury or death resulting from electrical shock or moving parts.

2. Route outdoor fan motor wires into control box. Connect 1 wire to the blue wire from OF2 terminal on the defrost control board. Connect the remaining wire to the orange wire from L2 on contactor using wire nuts.
3. Route orange wire from LPS into control box and connect to Y push-on terminal. Connect yellow wire from T1 terminal on cycle protector board to other LPS terminal.
4. Route wires from reversing valve solenoid into control box and connect to push-on terminals O and C on defrost control board.
5. Route wires from defrost thermostat into control box and connect to red wires from R and DFT using wire nuts.
6. Route wires from crankcase heater into control box and connect to contactor push-on terminals L1 and T1.
7. Connect wires to compressor; yellow wire from run capacitor to R terminal, blue wire from run capacitor to S terminal, and black wire from T1 terminal on contactor to C terminal. Install compressor terminal box cover.
8. Connect thermostat wires to compressor section defrost board. (See Fig. 4.)
9. Route line power wires into control box from the unit disconnect box. Connect 1 wire to yellow wire from L2 on contactor and connect the other wire to black wire from L1 on contactor using wire nuts.
10. Install access wrapper and top cover.
11. Turn on power to unit and cycle unit several times to assure correct operation.

NOTE: Control wiring applies to total electric systems. For 38SQ fossil fuel systems, discard old furnace interface kit and install new Optimizer II® or current interface control. Refer to Installation Instructions for control wiring.

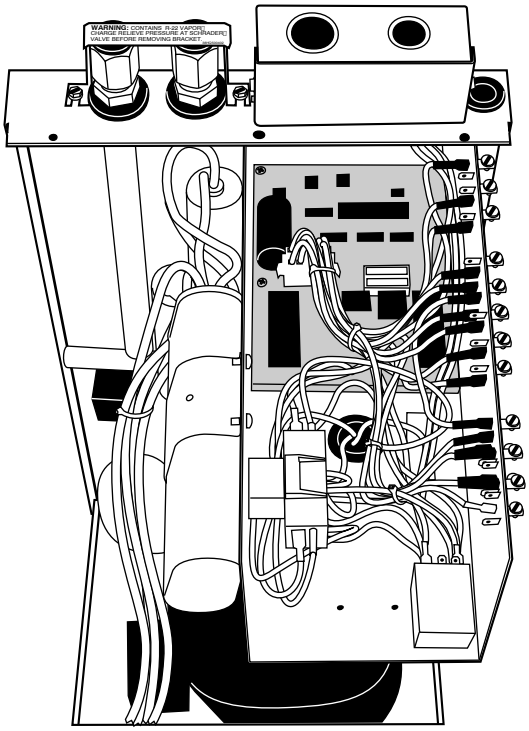

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Fig. 2—Control Box Prior to Modification

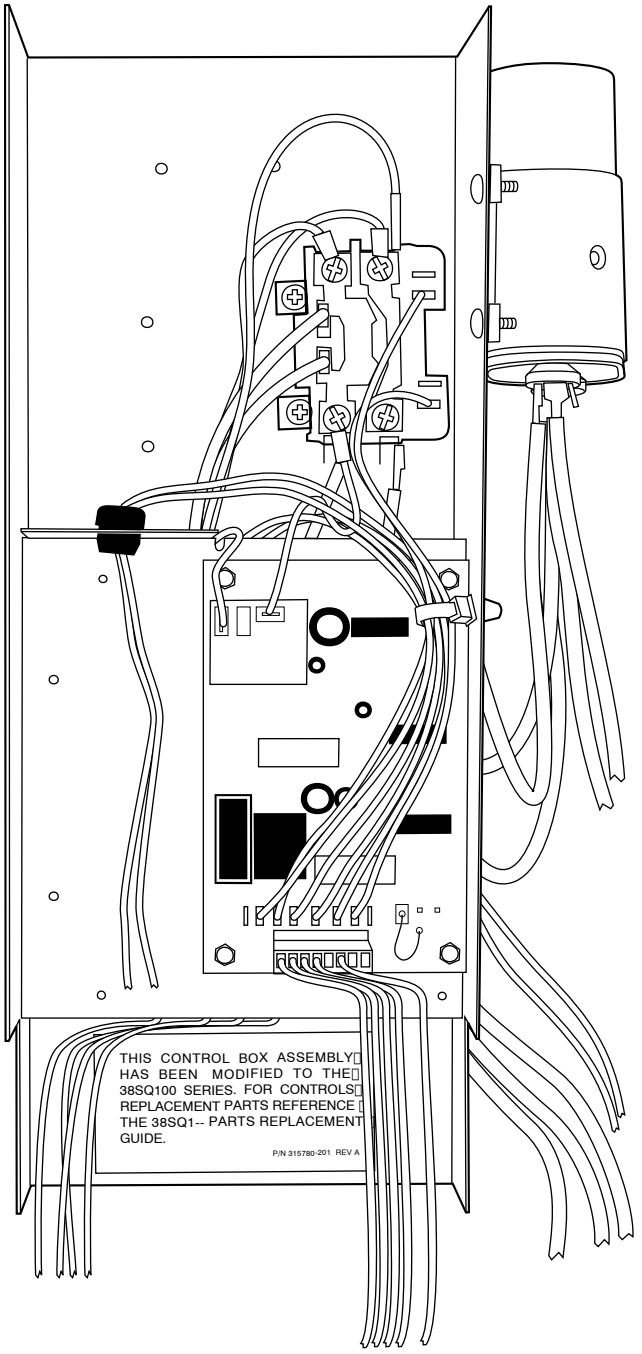

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Fig. 3—Modified Control Box

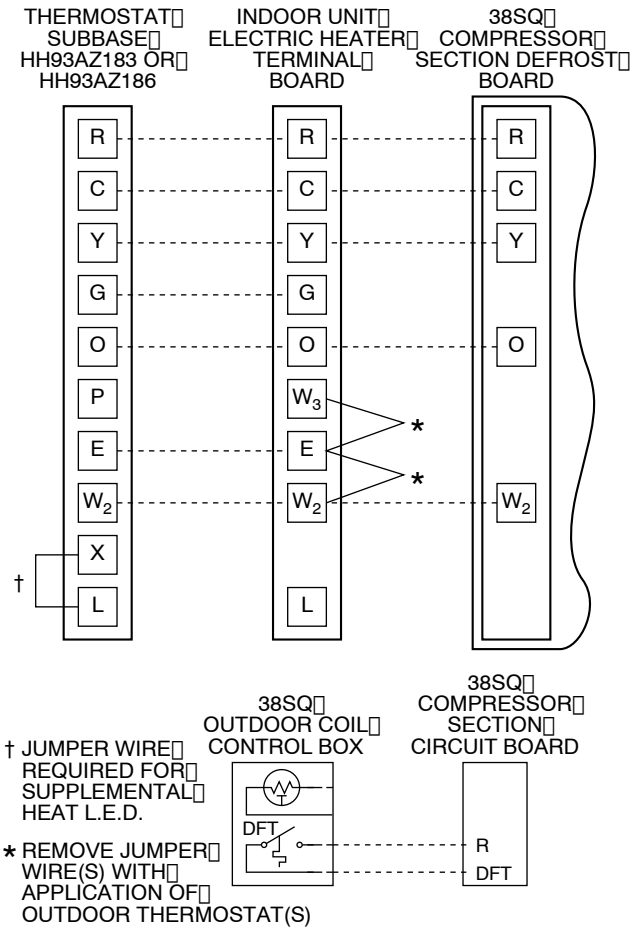

Fig. 4—Modified Wiring

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